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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/760,505

01/21/2004

Jiro Hiraiwa

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10/20/2008

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ALEXANDRIA, VA 22314

EXAMINER

ZHENG, LOIS L

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

10/20/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/760,505	Applicant(s) HIRAIWA ET AL.	
	Examiner LOIS ZHENG	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1 and 9 are amended in view of applicant's amendment filed 27 June 2008. Claim 3 is canceled. New claims 14-15 are added in view of applicant's amendment. Therefore, claims 1-2 and 4-15 are currently under examination.

Status of Previous Rejections

2. All previous rejections are withdrawn in view of applicant's amendment filed 27 June 2008.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 and 4-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tharp US 6,210,549(Tharp), and further in view of TW 453,508 (TW'508) and further in view of Russell et al. US 4,026,775(Russell).

Tharp teaches an electrolytic fluorine gas generator comprising a jacket with a cooling medium surrounding the electrolytic cell (Fig.10 #38).

Regarding claims 1, 5-6 and 9, even though Tharp teaches running cooling medium through the jacket, it is clear that the jacket as taught by Tharp is capable of carrying warm liquid as heat exchange medium as well. Therefore, the jacket as taught by Tharp reads on the claimed first heat exchange means.

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However, Tharp does not teach the claimed outer frame sealed and disposed further surrounding the outside of the first heat exchanging means with space and the claimed decompression or vacuum insulating zone which is formed in the outer frame. Tharp also does not teach the claimed thermometer measuring the temperature of the electrolytic bath and the claimed heating/cooling apparatus that heats and cools the heat exchange medium based on the temperature reading from the thermometer.

TW'508 teaches a protective sheath outside of a heated process chamber wherein the protective jacket comprising a sealed vacuum chamber in order to effectively provide thermal insulation and prevent heat loss(page 5 first full paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the thermal insulating sheath as taught by TW'508 separately around each of the cooling coils and the heating jacket of Tharp in order to effectively provide thermal insulation and prevent undesirable heat loss or heat gain to the heat exchange means as taught by TW'508.

Russell teaches controlling of an electrolytic coating bath by heating the electrolytic bath liquid by a heat exchange medium wherein the heat exchange medium is heated based on the temperature reading of electrolytic bath liquid(col. 3 lines 1-14 and claim 1).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the technique of heating and cooling heat exchange medium based on electrolyte temperature as taught by Russell into controlling the heat exchange medium of Tharp in view of TW'508 and incorporated the temperature sensor of Russell into the

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electrolytic bath of Tharp in view of TW'508 in order to better control the electrolytic bath temperature as taught by Russell.

Regarding claims 2 and 10, Tharp further teaches that heating temperature control means can be applied to the bottom of the electrolytic cell(col. 2 lines 58-60)

Regarding claims 4 and 11, Tharp further teaches the claimed support member comprising a flange part(Fig. 10 #5B) and an upper lid(Fig. 10 #2), the claimed cover member(Fig. 1 #6), and the claimed electric insulating material(Fig. 9 #32) and a gas sealing material(col. 11 lines 32-37) disposed between the support member and the cover member.

Regarding claims 7 and 12, Tharp further teaches that its electrolytic cell can be a box with open top(Fig. 10 #5) as claimed.

Regarding claims 8 and 13, Tharp further teaches that the molten salt is hydrogen fluoride(col. 9 lines 17-19).

5. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tharp in view of TW'508 and Russell, and further in view of Johnson et al. US 3,607,685(Johnson).

The teachings of Tharp in view of TW'508 and Russell are discussed in paragraph 4 above. However, Tharp in view of TW'508 and Russell do not teach the claimed electrically insulated tube connecting the heating/cooling apparatus and the pipe(i.e. to the heat exchange jacket).

Johnson teaches the need for electrical insulation/isolation of heat exchanging means from a molten salt cell by using refractory materials in between pipes to prevent "short circuit" hazards (col. 4 lines 21-26).

Regarding claims 14-15, it would have been obvious to one of ordinary skill in the art to have incorporated the refractory material in the piping between the heating/cooling apparatus of Tharp in view of TW'508 and Russell in order to prevent "short circuit" hazards as taught by Johnson.

Response to Arguments

6. Applicant's arguments with respect to claims 1-2 and 4-13 filed 27 June 2008 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

LLZ